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(FILE 'HOME' ENTERED AT 15:36:22 ON 07 JAN 2004)

FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, CANCERLIT, JAPIO' ENTERED AT
15:36:47 ON 07 JAN 2004

L1 13137 S PHOSPHORYLCHOLINE?
L2 618 S L1 AND (C REACTIVE PROTEIN)
L3 168 S L2 AND ANTIBOD?
L4 73 DUPLICATE REMOVE L3 (95 DUPLICATES REMOVED)
L5 323 S ANTI-CRP
L6 4 S L5 AND L4
L7 52 S (LABELED PHOSPHORYLCHOLINE)
L8 31 DUPLICATE REMOVE L7 (21 DUPLICATES REMOVED)
L9 1 S L8 AND CRP?
L10 4 S L8 AND (C REACTIVE PROTEIN)
L11 4 DUPLICATE REMOVE L10 (0 DUPLICATES REMOVED)

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L11 4 DUPLICATE REMOVE L10 (0 DUPLICATES REMOVED)

=>

L9 ANSWER 1 OF 1 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN 1981:225191 BIOSIS
DN PREV198172010175; BA72:10175
TI LIMULIN A C REACTIVE PROTEIN FROM LIMULUS-POLYPHEMUS.
AU ROBEY F A [Reprint author]; LIU T-Y
CS DIV BIOCHEM BIOPHYS, BUR BIOL, FOOD DRUG ADM, BETHESDA, MD 20205, USA
SO Journal of Biological Chemistry, (1981) Vol. 256, No. 2, pp. 969-975.
CODEN: JBCHA3. ISSN: 0021-9258.

DT Article

FS BA

LA ENGLISH

AB A protein which binds specifically to the phosphorylcholine residues of a phosphorylcholine affinity column in the presence of Ca^{2+} was isolated from the hemolymph of the horseshoe crab *L. polyphemus*. Immunological cross-reactivity of the phosphorylcholine-binding protein with limulin, a sialic acid-specific lectin in the hemolymph prepared by a different method, was shown by the formation of a single line of identity on immunodiffusions plates using antisera prepared against the phosphorylcholine-binding protein. The Limulus C-reactive protein (**CRP**) isolated by the phosphorylcholine affinity column precipitates with the pneumococcus C-polysaccharide and with a synthetic bovine serum albumin derivative to which phosphorylcholine is covalently attached. Precipitation is inhibited by EDTA or by phosphorylcholine. This protein also agglutinates horse red blood cells and shows weak cross-reactivity with sheep antisera prepared against rabbit C-reactive protein. The hemolymph hemagglutination titer is markedly decreased by pretreatment of the hemolymph with antisera prepared against the Limulus phosphorylcholine-binding protein. Phosphorylcholine does not inhibit the hemagglutination by whole hemolymph or by Limulus phosphorylcholine-binding protein but a protein containing sialic acid oligosaccharides does inhibit the hemagglutination. ESR experiments using a spin label which resembles phosphorylcholine shows binding of the spin label to the protein only in the presence of Ca^{2+} . Mg^{2+} cannot substitute for Ca^{2+} in supporting the binding of spin-labeled phosphorylcholine to limulin. The spin label can be disassociated from the protein by EDTA or competitively removed by phosphorylcholine but not by PO_4^{2-} or by choline. The relationship of limulin to the C-reactive proteins of rabbit and man is discussed.

CC Cytology - Animal 02506

Radiation biology - Radiation and isotope techniques 06504

Ecology: environmental biology - Water research and fishery biology 07517

Comparative biochemistry 10010

Biochemistry methods - Proteins, peptides and amino acids 10054

Biochemistry studies - Proteins, peptides and amino acids 10064

Biochemistry studies - Minerals 10069

Biophysics - Methods and techniques 10504

Biophysics - Molecular properties and macromolecules 10506

Blood - Blood and lymph studies 15002

Blood - Blood cell studies 15004

Blood - Lymphatic tissue and reticuloendothelial system 15008

Blood - Other body fluids 15010

Physiology and biochemistry of bacteria 31000

Immunology - General and methods 34502

Invertebrata: comparative, experimental morphology, physiology and pathology - Arthropoda: chelicerata 64060

IT Major Concepts

Biochemistry and Molecular Biophysics; Blood and Lymphatics (Transport and Circulation); Immune System (Chemical Coordination and Homeostasis); Physiology

IT Miscellaneous Descriptors

RABBIT SHEEP HUMAN HORSESHOE-CRAB BOVINE SERUM ALBUMIN HORSE

*✓ pulled electronic
LYCook 11/7/03*

ERYTHROCYTE AGGLUTINATION PHOSPHORYL CHOLINE AFFINITY SIALIC-ACID
SPECIFIC LECTIN PNEUMOCOCCUS C POLY PEPTIDE HEMOLYMPH CALCIUM IONS

ORGN Classifier

Gram-Positive Cocci 07700

Super Taxa

Eubacteria; Bacteria; Microorganisms

Taxa Notes

Bacteria, Eubacteria, Microorganisms

ORGN Classifier

Merostomata 75404

Super Taxa

Chelicerata; Arthropoda; Invertebrata; Animalia

Taxa Notes

Animals, Arthropods, Chelicerates, Invertebrates

ORGN Classifier

Bovidae 85715

Super Taxa

Artiodactyla; Mammalia; Vertebrata; Chordata; Animalia

Taxa Notes

Animals, Artiodactyls, Chordates, Mammals, Nonhuman Vertebrates,
Nonhuman Mammals, Vertebrates

ORGN Classifier

Leporidae 86040

Super Taxa

Lagomorpha; Mammalia; Vertebrata; Chordata; Animalia

Taxa Notes

Animals, Chordates, Lagomorphs, Mammals, Nonhuman Vertebrates, Nonhuman
Mammals, Vertebrates

ORGN Classifier

Equidae 86145

Super Taxa

Perissodactyla; Mammalia; Vertebrata; Chordata; Animalia

Taxa Notes

Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals,
Perissodactyls, Vertebrates

RN 107-73-3 (PHOSPHORYLCHOLINE)

14127-61-8 (CALCIUM IONS)

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 AB A protein which binds specifically to the phosphorylcholine residues of a phosphorylcholine affinity column in the presence of Ca²⁺ was isolated from the hemolymph of the horseshoe crab *L. polyphemus*. Immunological cross-reactivity of the phosphorylcholine-binding protein with limulin, a sialic acid-specific lectin in the hemolymph prepared by a different method, was shown by the formation of a single line of identity on immunodiffusions plates using antisera prepared against the phosphorylcholine-binding protein. The Limulus C-reactive protein (CRP) isolated by the phosphorylcholine affinity column precipitates with the pneumococcus C-polysaccharide and with a synthetic bovine serum albumin derivative to which phosphorylcholine is covalently attached. Precipitation is inhibited by EDTA or by phosphorylcholine. This protein also agglutinates horse red blood cells and shows weak cross-reactivity with sheep antisera prepared against rabbit C-reactive protein. The hemolymph hemagglutination titer is markedly decreased by pretreatment of the hemolymph with antisera prepared against the Limulus phosphorylcholine-binding protein. Phosphorylcholine does not inhibit the hemagglutination by whole hemolymph or by Limulus phosphorylcholine-binding protein but a protein containing sialic acid oligosaccharides does inhibit the hemagglutination. ESR experiments using a spin label which resembles phosphorylcholine shows binding of the spin label to the protein only in the presence of Ca²⁺. Mg²⁺ cannot substitute for Ca²⁺ in supporting the binding of spin-labeled phosphorylcholine to limulin. The spin label can be disassociated from the protein by EDTA or competitively removed by phosphorylcholine but not by PO₄-2 or by choline. The relationship of limulin to the C-reactive proteins of rabbit and man is discussed.
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ORGN Classifier

Gram-Positive Cocci 07700

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Eubacteria; Bacteria; Microorganisms

Taxa Notes

Bacteria, Eubacteria, Microorganisms

ORGN Classifier

Merostomata 75404

Super Taxa

Chelicerata; Arthropoda; Invertebrata; Animalia

Taxa Notes

Animals, Arthropods, Chelicerates, Invertebrates

ORGN Classifier

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Perissodactyls, Vertebrates

RN 107-73-3 (PHOSPHORYLCHOLINE)

14127-61-8 (CALCIUM IONS)

L6 ANSWER 3 OF 4 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
 on STN
 AN 91137827 EMBASE
 DN 1991137827
 TI **C-reactive protein** in patients with
 lymphatic filariasis: Increased expression on lymphocytes in chronic
 lymphatic obstruction.
 AU Lal R.B.; Dhawan R.R.; Ramzy R.M.; Farris R.M.; Gad A.A.
 CS Centers for Disease Control, Mail Stop G19, Atlanta, GA 30333, United
 States
 SO Journal of Clinical Immunology, (1991) 11/1 (46-53).
 ISSN: 0271-9142 CODEN: JCIMDO
 CY United States
 DT Journal; Article
 FS 004 Microbiology
 026 Immunology, Serology and Transplantation
 LA English
 SL English
 AB Levels of **C-reactive protein** (CRP) were
 evaluated by enzyme immunoassay in patients infected with the filarial
 parasite *Wuchereria bancrofti*. Significantly elevated levels of CRP ($P < 0.001$) were demonstrated in patients with chronic lymphatic pathology (CP; $n = 18$) compared to patients with asymptomatic microfilaremia (MF; $n = 13$) and normal volunteers (NV; $n = 29$). Serum levels of CRP showed an inverse correlation ($r(s) = -0.37$; $P < 0.05$) with phosphocholine (PC)-containing filarial antigen that was present in the circulation of patients with bancroftian filariasis. Marked elevations in the percentage of CRP-binding lymphocytes were observed in patients with CP (mean = 44%; $P < 0.001$) compared to those with MF (mean = 18%) or NV (mean = 3%). The increased percentage of surface CRP was not due to an abnormal change in major lymphocyte subset (CD5, CD4, CD8, or CD19). No significant correlation was noted between surface CRP and serum CRP; however, an inverse correlation was observed between surface CRP and PC-bearing circulating filarial Ag ($r(s) = -0.64$; $P < 0.001$). Biosynthetic labeling and immunoprecipitation with **anti-CRP antibodies** indicated quantitative differences in the synthesis of CRP in patients with CP compared to MF and NV. Complexing of CRP with PC-containing *Brugia malayi* antigen (CRP-BmA) caused increased binding to normal lymphocytes (<8%), but not close to the extent seen in patients with CP (44%), suggesting de novo synthesis of CRP in these patients. Thus, the CRP-binding lymphocytes may represent a marker of immunologically committed cells in chronic lymphatic obstruction and may play a role in the pathogenesis of this disease.
 CT Medical Descriptors:
 *filariasis
 *lymphocyte
 adolescent
 adult
 article
 clinical article
 controlled study
 female
 human
 human cell
 male
 priority journal
 serum
 Drug Descriptors:
 *c reactive protein: EC, endogenous compound
 *phosphorylcholine: EC, endogenous compound
 RN (c reactive protein) 9007-41-4; (
 phosphorylcholine) 107-73-3

L6 ANSWER 3 OF 4 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN

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AU Lal R.B.; Dhawan R.R.; Ramzy R.M.; Farris R.M.; Gad A.A.

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ISSN: 0271-9142 CODEN: JCIMDO

CY United States

DT Journal; Article

FS 004 Microbiology
026 Immunology, Serology and Transplantation

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CT Medical Descriptors:
*filariasis
*lymphocyte
adolescent
adult
article
clinical article
controlled study
female
human
human cell
male
priority journal
serum
Drug Descriptors:
*c reactive protein: EC, endogenous compound
*phosphorylcholine: EC, endogenous compound
RN (c reactive protein) 9007-41-4; (
phosphorylcholine) 107-73-3

L11 ANSWER 3 OF 4 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 AN 1984:175424 BIOSIS
 DN PREVL198477008408; BA77:8408
 TI SYNTHESIS AND USE OF NEW SPIN LABELED DERIVATIVES OF PHOSPHORYL CHOLINE IN
 A COMPARATIVE STUDY OF HUMAN DOGFISH MUSTELUS-CANIS AND LIMULUS-POLYPHEMUS
C REACTIVE PROTEINS.
 AU ROBEY F A [Reprint author]; LIU T-Y
 CS DIVISION OF BIOCHEMISTRY AND BIOPHYSICS, OFFICE OF BIOLOGICS, NATIONAL
 CENTER FOR DRUGS AND BIOLOGICS FOOD AND DRUG ADMINISTRATION, BETHESDA,
 MARYLAND 20205, USA
 SO Journal of Biological Chemistry, (1983) Vol. 258, No. 6, pp. 3895-3900.
 CODEN: JBCHA3. ISSN: 0021-9258.
 DT Article
 FS BA
 LA ENGLISH
 AB New spin labeled derivatives of phosphorylcholine were synthesized. The
 compounds cause reversible inhibition of the precipitation reactions
 between pneumococcal C-polysaccharide and the **C-reactive**
proteins from humans, dogfish sharks (Mustelus canis) and
 horseshoe crabs (Limulus polyphemus). The spin labeled
phosphorylcholine derivatives also rival phosphorylcholine as a
 ligand for the human, dogfish and Limulus **C-reactive**
proteins. The interactions of the purified **C-**
reactive proteins with the spin labeled derivatives of
 phosphorylcholine were studied using ESR spectrometry. The dramatic
 decrease in the ESR signal of some of the spin labels is due to
 immobilization of the label. Only the well known phosphate spin label,
 4-phosphate-2,2,6,6-tetramethyl-piperidine-1-oxyl could be used for
 binding studies on human and Limulus **C-reactive**
proteins. Thus, by Scatchard analysis, the human **C-**
reactive protein bound 1 mol of phosphate spin label per
 mol of protein with a $K_a = 3.91 \times 10^3 \text{ M}^{-1}$; the Limulus **C-**
reactive protein bound only 0.5 mol of phosphate spin
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 Inhibition studies using purified C-polysaccharide-induced inhibition of
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 $4.78 \times 10^{-5} \text{ M}$ at 18.degree. C. The phosphate spin label did not
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 plot analyses. The dogfish **C-reactive protein**
 , which exists as a MW = 50,000 dimer, bound 2 mol of the
 phosphorylcholine spin label per mol of protein, and this binding
 exhibited negative cooperativity as indicated by a Hill coefficient of
 0.75.
 CC Ecology: environmental biology - Water research and fishery biology
 07517
 Comparative biochemistry 10010
 Biochemistry methods - Lipids 10056
 Biochemistry studies - Proteins, peptides and amino acids 10064
 Biochemistry studies - Lipids 10066
 Biophysics - Methods and techniques 10504
 Biophysics - Membrane phenomena 10508
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 Pathology - Inflammation and inflammatory disease 12508
 Blood - Blood and lymph studies 15002
 Temperature - General measurement and methods 23001
 Invertebrata: comparative, experimental morphology, physiology and
 pathology - Arthropoda: chelicerata 64060
 IT Major Concepts
 Biochemistry and Molecular Biophysics; Blood and Lymphatics (Transport
 and Circulation); Pathology; Physiology

IT Miscellaneous Descriptors
ESR
ORGN Classifier
Merostomata 75404
Super Taxa
Chelicerata; Arthropoda; Invertebrata; Animalia
Taxa Notes
Animals, Arthropods, Chelicerates, Invertebrates
ORGN Classifier
Chondrichthyes 85202
Super Taxa
Pisces; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Fish, Nonhuman Vertebrates, Vertebrates
ORGN Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates
RN 107-73-3D (PHOSPHORYLCHOLINE)

L11 ANSWER 3 OF 4 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
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 TI SYNTHESIS AND USE OF NEW SPIN LABELED DERIVATIVES OF PHOSPHORYL CHOLINE IN
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Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates
RN 107-73-3D (PHOSPHORYLCHOLINE)

L11 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1990:455408 CAPLUS
 DN 113:55408
 ED Entered STN: 17 Aug 1990
 TI Diagnostic compositions containing **labeled phosphorylcholine** and/or aminoethyl dihydrogen phosphate for detection and/or quantification of **C-reactive protein** in body fluids
 IN Heggli, Dag Erik
 PA Axis Research A/S, Norway
 SO Brit. UK Pat. Appl., 8 pp.
 CODEN: BAXXDU
 DT Patent
 LA English
 IC ICM C07F009-02
 ICS C07F009-09; C12N009-00; C12Q001-00
 CC 9-5 (Biochemical Methods)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2217840	A1	19891101	GB 1988-9574	19880422
PRAI	GB 1988-9574		19880422		

AB A diagnostic compn. for detection or detn. of **C-reactive protein** comprises phosphorylcholine (PC) or aminoethyl di-H phosphate (AEDP) chem. linked to an enzyme, a fluorescent agent, a radioactive substance, or a metal colloid particle (esp. Au or Ag). The protein binds to PC and AEDP.
 ST **C reactive protein** diagnosis labeled conjugate; phosphorylcholine labeled **C reactive protein** assay; aminoethyl hydrogen phosphate **C reactive protein**
 IT Diagnosis
 (**C-reactive protein** detn. by labeled aminoethyl dihydrogen phosphate and phosphorylcholine for)
 IT Fluorescent substances
 Radioactive substances
 (conjugates with aminoethyl dihydrogen phosphate and phosphorylcholine, in **C-reactive protein** detn.)
 IT Proteins, specific or class
 RL: ANT (Analyte); ANST (Analytical study)
 (C-reactive, detn. of, labeled aminoethyl dihydrogen phosphate and phosphorylcholine in)
 IT Enzymes
 RL: ANST (Analytical study)
 (conjugates, with aminoethyl dihydrogen phosphate and phosphorylcholine, in **C-reactive protein** detn.)
 IT 7440-22-4D, Silver, aminoethyl dihydrogen phosphate and phosphorylcholine conjugates 7440-57-5D, Gold, aminoethyl dihydrogen phosphate and phosphorylcholine conjugates
 RL: ANST (Analytical study)
 (colloids, in **C-reactive protein** detn.)
 IT 107-73-3D, Phosphorylcholine, labeled conjugates 1071-23-4D, labeled conjugates
 RL: ANST (Analytical study)
 (in **C-reactive protein** detn.)

L11 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1990:455408 CAPLUS

DN 113:55408

ED Entered STN: 17 Aug 1990

TI Diagnostic compositions containing **labeled phosphorylcholine** and/or aminoethyl dihydrogen phosphate for detection and/or quantification of **C-reactive protein** in body fluids

IN Heggli, Dag Erik

PA Axis Research A/S, Norway

SO Brit. UK Pat. Appl., 8 pp.

CODEN: BAXXDU

DT Patent

LA English

IC ICM C07F009-02

ICS C07F009-09; C12N009-00; C12Q001-00

CC 9-5 (Biochemical Methods)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	GB 2217840	A1	19891101	GB 1988-9574	19880422
PRAI	GB 1988-9574		19880422		

AB A diagnostic compn. for detection or detn. of **C-reactive protein** comprises phosphorylcholine (PC) or aminoethyl di-H phosphate (AEDP) chem. linked to an enzyme, a fluorescent agent, a radioactive substance, or a metal colloid particle (esp. Au or Ag). The protein binds to PC and AEDP.

ST **C reactive protein** diagnosis labeled conjugate; phosphorylcholine labeled **C reactive protein** assay; aminoethyl hydrogen phosphate **C reactive protein**

IT Diagnosis

(**C-reactive protein** detn. by labeled aminoethyl dihydrogen phosphate and phosphorylcholine for)

IT Fluorescent substances

Radioactive substances

(conjugates with aminoethyl dihydrogen phosphate and phosphorylcholine, in **C-reactive protein** detn.)

IT Proteins, specific or class

RL: ANT (Analyte); ANST (Analytical study)

(C-reactive, detn. of, labeled aminoethyl dihydrogen phosphate and phosphorylcholine in)

IT Enzymes

RL: ANST (Analytical study)

(conjugates, with aminoethyl dihydrogen phosphate and phosphorylcholine, in **C-reactive protein** detn.)

IT 7440-22-4D, Silver, aminoethyl dihydrogen phosphate and phosphorylcholine conjugates 7440-57-5D, Gold, aminoethyl dihydrogen phosphate and phosphorylcholine conjugates

RL: ANST (Analytical study)

(colloids, in **C-reactive protein** detn.)

IT 107-73-3D, Phosphorylcholine, labeled conjugates 1071-23-4D, labeled conjugates

RL: ANST (Analytical study)

(in **C-reactive protein** detn.)